

Microbiological Associates, Inc.
4733 Bethesda Avenue
Bethesda, Maryland 20014

Influence of Exogenous Materials on the Activation of Latent C-Type RNA Viruses.
Contract #2

This program is designed to study the ability of chemicals and fractions of cigarette smoke to activate latent C-Type RNA viruses present in all vertebrate embryonic cells studied, and associated with or present during, the carcinogenic process in chickens and a variety of mammals. Similar C-Type RNA virus particles have recently been identified in a human sarcoma tumor and in a human breast carcinoma.

After a well-evaluated and standardized in vitro assay system for the quantitative measurement of relative carcinogenicity has been developed, that system will be applied to determine the in vitro toxic dose of known chemical carcinogens, tobacco smoke, and selected smoke components for defined tissue-cultured cell lines. Later, the in vitro transformation and viral expression consequent to cell exposures to known chemical carcinogens and to smoke or smoke fractions will be determined. Cells exposed to smoke or smoke extracts for varying periods with and without extraneously added "helper" viruses will be closely watched for cytopathic effect, transformation, viral antigen and, where possible, viral titer by the complement fixation (COMuL) test. To test for transplantability or tumorigenesis, the treated cultured cells will be injected into newborn animals.

Current Contract Level: \$250,000.

1005075433